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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,840	08/26/2003	William F. Howard	WEAT/0315	3846
36735	7590	08/30/2005	EXAMINER	
MOSER, PATTERSON & SHERIDAN, L.L.P. 3040 POST OAK BOULEVARD, SUITE 1500 HOUSTON, TX 77056-6582			BOMAR, THOMAS S	
			ART UNIT	PAPER NUMBER
			3672	

DATE MAILED: 08/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/648,840

Applicant(s)

HOWARD, WILLIAM F.

Examiner

Shane Bomar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 22, 58, and 98.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 79. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the

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applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “36” has been used to designate both an outlet and a vane (see Fig. 3). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

4. The disclosure is objected to because of the following informalities: in the next to last line of paragraph [0005], the recitation of “they are compromises” should most likely be --there are compromises--; the recitation of “lowestmost” at the top of page 9 and at the beginning of paragraph [0025] should most likely be --lowermost--. In addition, it is stated in paragraph [0021] that the uppermost outlet of the pump is sealingly engaged and in fluid communication with the inner circumference of sleeve 54. Analysis of Figure 2 leads one to believe that the outlet 40 is in communication with the annulus defined by tubing 50 and sleeve 54. It appears that if the outlet were to be in communication with the inner circumference of sleeve 54, then the

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system would fail because either the produced fluids would not be able to exit or the dampening capabilities would be diminished, or destroyed.

Appropriate correction is required.

### *Claim Objections*

5. Claims 1, 5, 6, 12, 14, 18, 21, and 23 are objected to because of the following informalities: the recitations of “the centrifugal pump”, “said drive motor”, and “said motor” in claim 1 lack antecedent basis; the recitation of “said lubricant” in claim 5 lacks antecedent basis; the recitation of “said drive means” in claim 6 lacks antecedent basis; the recitation of “said production sleeve” in claim 12 lacks antecedent basis; in claim 14, the recitation of “extending an energy transfer mechanism” should be --extending the energy transfer mechanism-- because the mechanism has already been introduced; the recitation of “the energy transfer member” in claim 14 should be --the energy transfer mechanism--; in claim 18, the recitation of “the drive rod” lacks antecedent basis; in the preamble of claim 21, the recitation of “said excursion prevention mechanism” should be --said excursion prevention element--; the recitation of “therewith” after “therebetween” in claim 21 should most likely be removed; in claim 23, the recitation of “a pump outlet” should be --the pump outlet--, unless another outlet in addition to the one of claim 19 is being claimed; the recitation of “said sleeve” in claim 23 lacks antecedent basis.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 4, 7-19, and 21-24 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 1,504,658 to Ulmer.

Regarding claims 1, 2, 5, and 8-10, Ulmer discloses a downhole pumping apparatus for pumping fluids from a wellbore, comprising: a barrier 12 extending along at least a portion of the wellbore to isolate an interior region of the wellbore from the adjacent earth; a centrifugal pump positionable in the wellbore in a producing region thereof; a sleeve 17 extending from the opening of the wellbore at the earth's surface to the centrifugal pump; a drive member inherently located outwardly of the bore; a drive rod 14, 16 extending within said sleeve and interconnected to said pump and said drive member; and an inherent dampening element positioned in contact with said drive rod within the wellbore when said drive rod is actuated by said drive member to operate said pump (see Figs. 1 and 2, and page 1, line 93 through page 2, line 16). The oil contained in the sleeve 17 is considered an inherent dampening element because it is contained in an annulus between the sleeve and the drive rod in a nearly identical fashion to that of the instant invention, therefore the oil would have to provide the same capabilities.

Regarding claim 4, the drive member rotates the drive rod (see page 1, lines 103-108 and page 2, lines 114-117).

Regarding claim 7, the rod includes at least one mass imbalance portion therein, i.e., the connection at 15 (see Figs. 1 and 2).

Regarding claims 11 and 12, production tubing 2 extends from said pump to a location adjacent the opening of the wellbore in the earth; and said pump includes a pump outlet in fluid communication with said production tubing 2, wherein said sleeve 17 extends within, and is substantially surrounded by, said production tubing (see Fig. 2)

Regarding claim 13, casing 12 extends along the borehole (see Figs. 1 and 2).

Regarding claims 14-16, Ulmer discloses an inherent method of recovery of fluids from a borehole, wherein the fluids exist at a pressure in the borehole insufficient to naturally drive them to the surface of their own accord, comprising: providing a centrifugal pump in the borehole and having a fluid inlet, a fluid outlet, and an energy transfer mechanism 14, 16 to transfer energy to the well fluids sufficient cause them to be lifted to the opening of the borehole with the earth's surface; positioning a drive member at a location remote from the pump to provide energy transferred through rotary motion to the pump; extending the energy transfer mechanism from the pump to the drive member, the energy transfer mechanism including an inherent excursion-dampening element that further includes a drive rod received in a sleeve 17 housing a lubricant; and pumping fluids from the wellbore (see Figs. 1 and 2, page 1, line 93 through page 2, line 16, and page 2, lines 114-117). The oil contained in the sleeve 17 is considered an inherent dampening element because it is contained in an annulus between the

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sleeve and the drive rod in a nearly identical fashion to that of the instant invention, therefore the oil would have to provide the same capabilities.

Regarding claim 17, said pump includes at least one impeller 23 received within a diffuser housing and the impeller is rotatably driven by a rod extending down the wellbore from a drive mechanism located adjacent said wellhead (see Fig. 2).

Regarding claim 18, the rod includes at least one mass imbalance portion therein, i.e., the connection at 15 (see Figs. 1 and 2).

Regarding claims 19, 21, and 24, Ulmer discloses a downhole pumping apparatus, comprising: a centrifugal pump stack having an inlet, an outlet, and a plurality of impellers 23, 45 and diffuser housings in fluid communication therein received in a wellbore; a drive rod 14, 16 extendible from a surface location, downwardly through said wellbore, and in physical coupled engagement with at least one of said impellers; a drive member located adjacent to said wellbore and in physical driving engagement with said drive rod outwardly of said wellbore; said drive rod including an inherent naturally occurring excursion element therein; and an inherent excursion prevention element disposed in relation to said drive rod to prevent excursion of said drive rod, wherein the excursion prevention element includes a sleeve 17 extending about the drive rod and forming an annulus containing oil therebetween (see Figs. 1 and 2, page 1, line 93 through page 2, line 16, and page 2, lines 114-117). The oil contained in the sleeve 17 is considered an inherent excursion prevention element because it is contained in an annulus between the sleeve and the drive rod in a nearly identical fashion to that of the instant invention, therefore the oil would have to provide the same capabilities.



Regarding claim 22, the rod includes at least one mass imbalance portion therein, i.e., the connection at 15 (see Figs. 1 and 2).

Regarding claim 23, production tubing 2 extends from said pump to a location adjacent the opening of the wellbore in the earth, wherein said sleeve 17 extends within, and is substantially surrounded by, said production tubing 2 (see Fig. 2)

8. Claims 1, 4, 7, 8, 10-14, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by US patent application publication to Michael et al.

Regarding claims 1, 8, and 10, Michael et al disclose a downhole pumping apparatus for pumping fluids from a wellbore, comprising: a barrier extending along at least a portion of the wellbore to isolate an interior region of the wellbore from the adjacent earth; a pump positionable in the wellbore in a producing region thereof; a sleeve 254 extending from the opening of the wellbore at the earth's surface to the pump; a drive member inherently located outwardly of the bore; a drive rod 280, 460 extending within said sleeve and interconnected to said pump and said drive member; and a dampening element, i.e., a fluid, positioned in contact with said drive rod within the wellbore when said drive rod is actuated by said drive member to operate said pump (see Fig. 21, and paragraphs [0074], [0075], and [0078]).

Regarding claim 4, the drive member rotates the drive rod (see paragraph [0075]).

Regarding claim 7, the rod includes at least one mass imbalance portion therein, i.e., a rod connector.

Regarding claims 11 and 12, production tubing extends from said pump to a location inherently adjacent the opening of the wellbore in the earth; and said pump includes a pump

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outlet in fluid communication with said production tubing, wherein said sleeve 254 extends within, and is substantially surrounded by, said production tubing (see Fig. 21)

Regarding claim 13, casing extends along the borehole (see Fig. 21).

Regarding claims 14, Michael et al disclose a method of recovery of fluids from a borehole, wherein the fluids exist at a pressure in the borehole insufficient to naturally drive them to the surface of their own accord, comprising: providing a pump in the borehole and having a fluid inlet, a fluid outlet, and an energy transfer mechanism 280, 460 to transfer energy to the well fluids sufficient cause them to be lifted to the opening of the borehole with the earth's surface; positioning an inherent drive member at a location remote from the pump to provide energy transferred through rotary motion to the pump; extending the energy transfer mechanism from the pump to the drive member, the energy transfer mechanism including an inherent excursion-dampening element that further includes a drive rod received in a sleeve 254; and pumping fluids from the wellbore (see Fig. 21, and paragraphs [0077] and [0078]).

Regarding claim 18, the rod includes at least one mass imbalance portion therein, i.e., a rod connector.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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10. Claims 3, 6, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulmer.

While Ulmer teaches the apparatus of claims 1 and 19 above that inherently contains a motor (inherent because it is not shown, but must be there to drive the pump), it is not specifically taught what type of drive member, or motor, is used and at what speeds it operates. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the motor could be electric since electric motors are notoriously known in the art to be used to drive pumps. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the motor could be operated at speeds in excess of 3400 RPM. The motivation for this last statement is that the structures of the Ulmer apparatus and the instant invention are nearly identical. Therefore, barring any showings or assertions in the current invention to the contrary, it would have been obvious that the pump of Ulmer could be driven at speeds in excess of 3400 RPM depending on the motor used and/or on the conditions encountered in the borehole.

11. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michael et al.

While Michael et al teach the apparatus of claim 1 above that inherently contains a motor (inherent because it is not shown, but must be there to drive the pump), it is not specifically taught what type of drive member, or motor, is used and at what speeds it operates. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the motor could be electric since electric motors are notoriously known in the art to be used to drive pumps. Furthermore, it would have been obvious to one of ordinary skill in the art at the

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time the invention was made that the motor could be operated at speeds in excess of 3400 RPM. The motivation for this last statement is that the structures of the Michael et al apparatus and the instant invention are nearly identical. Therefore, barring any showings or assertions in the current invention to the contrary, it would have been obvious that the pump of Michael et al could be driven at speeds in excess of 3400 RPM depending on the motor used and/or on the conditions encountered in the borehole.

### *Conclusion*

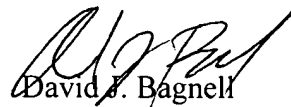
12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rittershofer teaches a pump with an elongated drive shaft enclosed in a sleeve containing a damping liquid (see col. 2, lines 30-34 and lines 55-58). Eller and Getty teach downhole pumps with shafts driven by surface motors, the shafts being enclosed by sleeves that contain fluids. Beck et al, Fix, Morrow, Nelson, Newton, North, Towner et al, Vines, Wintroath, and Zahiu teach various types of pumps of particular interest. Ebara Corporation, Hibner et al, Pfeifer, and Romani teach various ways of dampening shafts.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is 571-272-7026. The examiner can normally be reached on Monday - Thursday from 7:00am to 4:30pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David J. Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

tsb



August 25, 2005